

WHAT IS CLAIMED IS:

1. A partially crosslinked adhesive-supported porous film for battery separator, comprising a porous film substrate having supported thereon a partially crosslinked adhesive that is partially crosslinked by preparing a reactive polymer having a functional group in the molecule and capable of being crosslinked upon reaction with a polyfunctional compound having reactivity with the functional group and then reacting the reactive polymer with a polyfunctional compound.

2. The partially crosslinked adhesive-supported porous film as claimed in claim 1, wherein the partially crosslinked adhesive is partially crosslinked by reacting a reactive polymer having an active hydrogen-containing functional group with a polyfunctional isocyanate compound.

3. The partially crosslinked adhesive-supported porous film as claimed in claim 1, wherein the partially crosslinked adhesive is partially crosslinked by reacting a reactive polymer having an active hydrogen-containing functional group with a polyfunctional epoxy compound.

4. The partially crosslinked adhesive-supported porous film as claimed in claim 2, wherein the active hydrogen-containing functional group is a hydroxyl group, a carboxyl group, or an amino group.

5. The partially crosslinked adhesive-supported porous film as claimed in claim 3, wherein the active hydrogen-containing functional group is a hydroxyl group, a carboxyl group, or an amino group.

6. The partially crosslinked adhesive-supported porous film as claimed in claim 1, wherein the partially crosslinked adhesive has a gel fraction in the range of from 5 to 99%.

7. The partially crosslinked adhesive-supported porous film as claimed in claim 1, wherein the partially crosslinked adhesive is supported on the porous film substrate at a supporting ratio in the range of from 5 to 95%.

8. The partially crosslinked adhesive-supported porous film as claimed in any one of claims 1 to 4, wherein the reactive polymer has a glass transition temperature of from -30°C to 100°C .

9. An electrode/porous film laminate comprising the partially crosslinked adhesive-supported porous film as claimed in any one of claims 1-7 and an electrode laminated thereon and contact bonded thereto.

10. An electrode/porous film junction body, prepared by further crosslinking the partially crosslinked adhesive in the electrode/porous film laminate as claimed in claim 9 upon reaction of the unreacted functional group in the reactive polymer and the polyfunctional compound and bonding an electrode to the porous film.

11. The electrode/porous film junction body as claimed in claim 10, wherein the porous film has an area heat shrinkage factor of 20% or less after heating at 150°C for one hour.

12. A process of producing a battery, which comprises supporting a porous film substrate with a partially crosslinked adhesive that is partially crosslinked by preparing a

reactive polymer having a functional group in the molecule and capable of being crosslinked upon reaction with a polyfunctional compound having reactivity with the functional group and then reacting the reactive polymer with a polyfunctional compound; laminating and contact bonding an electrode on the thus obtained partially crosslinked adhesive-supported porous film to form an electrode/porous film laminate; and after charging the electrode/porous film laminate into a battery container, pouring an electrolyte liquid containing the polyfunctional compound into the battery container and heating it to react the unreacted functional group in the reactive polymer with the polyfunctional compound, thereby further crosslinking the partially crosslinked adhesive supported on the porous film and bonding the electrode to the porous film to form an electrode/porous film junction body and obtain a battery having as a separator the porous film in the electrode/porous film junction body.

13. A battery having as an electrode/separator junction body an electrode/porous film junction body having an electrode bonded to a porous film with an adhesive that is obtained by preparing a reactive polymer having a functional group in the molecule and capable of being crosslinked upon reaction with a polyfunctional compound having reactivity with the functional group and then reacting the reactive polymer with a polyfunctional compound.